

## METAL GLAZE HIGH VOLTAGE CHIP RESISTORS, ANTI-SULFURATION

### 耐硫化金屬釉高壓封裝電阻器



#### Features

1. Flameproof UL94V0 molded package, resistant to sulfuration, heat and humidity.
2. Special design for automatic surface mounting.
3. Metal-glaze elements provide high stable performance against environmental conditions and overload.
4. Ultra high surge withstanding & pulse withstanding performance.
5. Excellent mechanical strength & electrical stability.
6. Reducing assembly costs.

#### 特色

1. 不燃性樹脂封裝成型，具高耐硫化、耐溫、及耐濕特性。
2. 特殊設計，專供自動表面黏著作業。
3. 使用高穩定性金屬釉作基體，耐溫度及超負載，性能安定。
4. 超高耐雷擊及耐脈衝特性。
5. 高安定性及信賴性。
6. 降低裝配費用。

## ELECTRICAL AND MECHANICAL PERFORMANCE

### 電氣及機械特性

特性 Characteristics	規格值 Standards	試驗方法 Test Methods
阻值容許誤差 Resistance Tolerance	±5%(J) or ±1%(F)	-
溫度係數 Resistance Temp. Coeff.	±200ppm / °C	-65°C ~ 200°C
額定負載 Power Rating Load	Surface Temp. 275°C Max. 最高表面溫度 275°C $\Delta R/R \leq \pm 1\%$	Rated voltage for 30 minutes 額定電壓 / 30 分鐘
短時間過負載 Short Time Overload	±1%	2.5 times of rated voltage for 5 sec. 2.5 倍額定電壓/5 秒
耐電壓 Dielectric Withstanding Voltage	No evidence of mechanical damage or insulation breakdown 無機械性能損壞及絕緣擊穿現象	AC 1000V for 1min. 施加 AC 1000V 電壓 1 分鐘
絕緣電阻 Insulation Resistance	10,000 MΩ	DC 500V megger
耐脈衝 Pulse Loading Capability	$\Delta R/R \leq \pm 2\%$	IEC 60065 14.1
焊錫性 Solder-ability	Minimum 95% coverage 焊錫面積 $\geq 95\%$	235°C ± 5°C for 2seconds
浸錫耐熱性 Resistance to Soldering Heat	No evidence of mechanical damage. 無機械性能損壞現象, $\Delta R/R \leq \pm 1\%$	270 ± 5°C for 10 ± 1 seconds

## ENVIRONMENTAL CHARACTERISTICS

### 耐環境特性

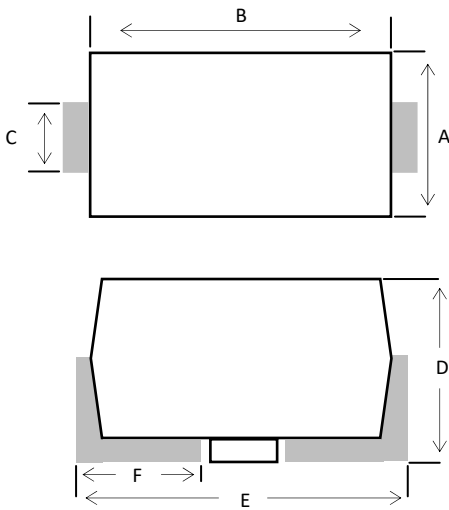
特性 Characteristics	規格值 Standards	試驗方法 Test Methods
溫度週率 Temp. Cycle	$\Delta R/R \leq \pm 2\%$	-65°C(30mins) → Room Temp.(3mins) → +275°C(30mins) → Room Temp.(3mins) / (5 cycles)
負載壽命 Load Life	$\Delta R/R \leq \pm 5\%$	Rated power load 90 minutes ON 30minutes OFF 70°C 1000hours
耐濕壽命 Moisture-proof Load Life	$\Delta R/R \leq \pm 5\%$	Rated power load 90 minutes ON 30minutes OFF 40°C 95%RH 1000hours

※參考規格 Reference Standards

JIS C 5201

## Dimensions

尺寸



Unit : mm

Rated Wattage	A ± 0.3	B ± 0.3	C ± 0.3	D ± 0.3	E max.	F ± 0.3	Resistance Range (Ω)	Max. Working Voltage	
								DC	RMS
1WL	4.0	6.7	1.4	3.55	7.9	1.5	100K~10M	1600V	1150V
2WL	5.5	10.5	1.7	5.0	12	2.3	100K~10M	3500V	2500V
3WL	7.3	13.5	1.7	6.8	17	2.5	100K~10M	5000V	3500V

**Note :** Too low or too high ohmic values can be supplied only case by case.

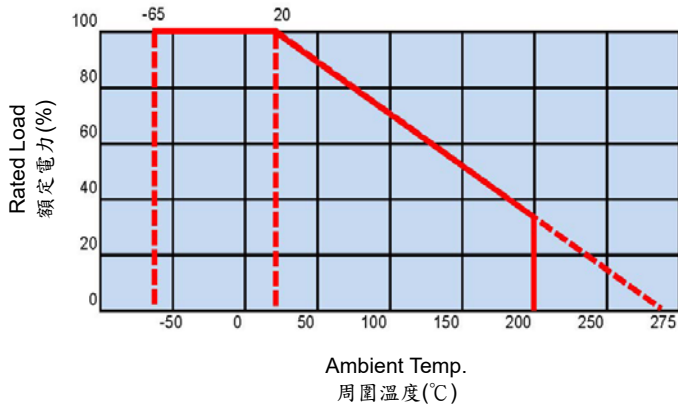
Rated Continuous Working Voltage (RCWV) shall be determined from

$RCWV = \sqrt{\text{Rated Power} \times \text{Resistance Value}}$  or Max. Permissible Voltage listed above, whichever less.

## Derating Curve

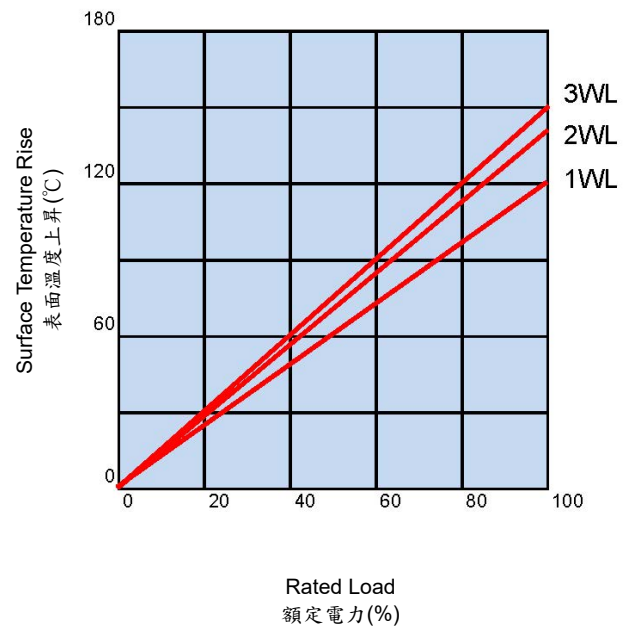
電力輕減曲線

For resistors operated in ambient temperatures above 20°C, power rating must be derated in accordance with the curve below.



## Surface Temperature Rise

表面溫度上昇曲線

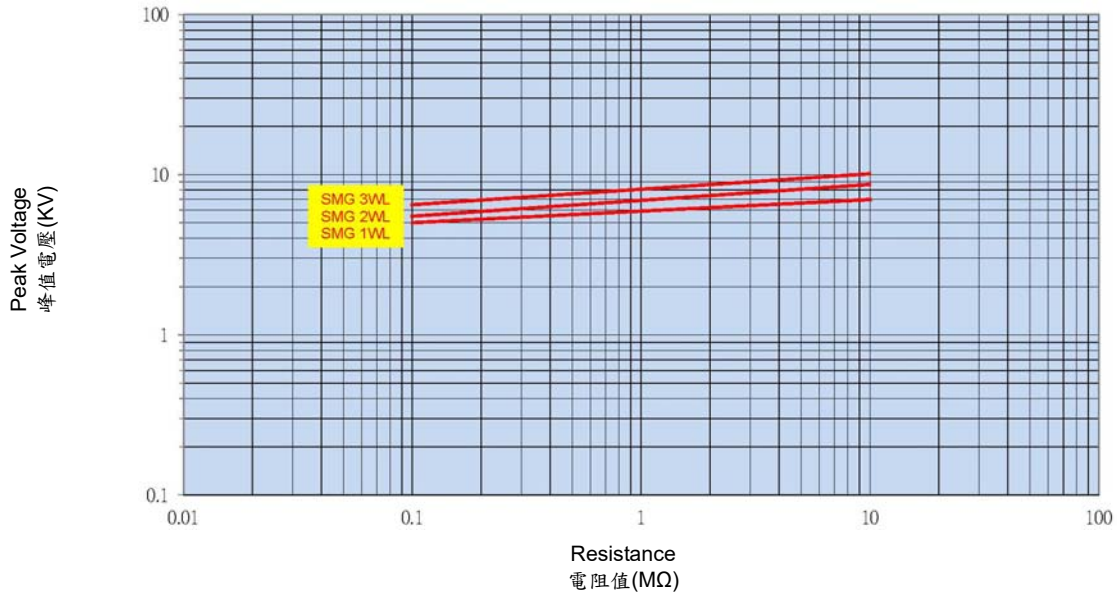


## Lightning Surge

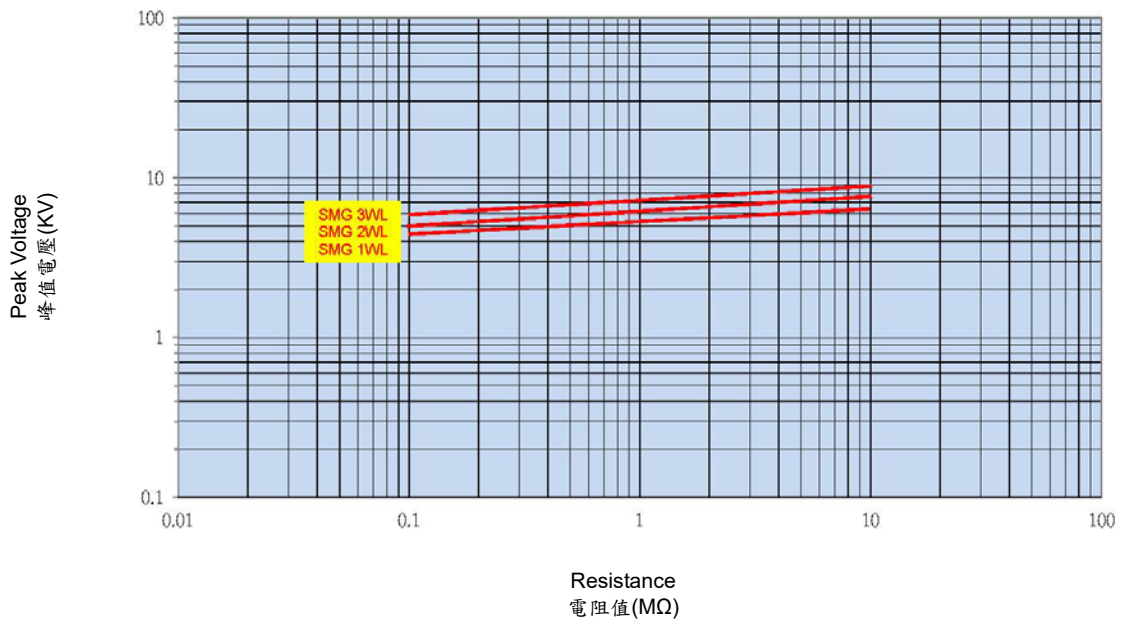
### 雷擊特性曲線

The resistors are designed to withstand 1.2/50  $\mu\text{s}$  pulse & 10/700  $\mu\text{s}$  according to ICE61000-4-5 · 30 pulse per voltage, 30 seconds between each pulse. The resistance value change rate between pre-and-post test shall be within  $\pm 5\%$

### 1.2/50 $\mu\text{s}$ Lightning Surge



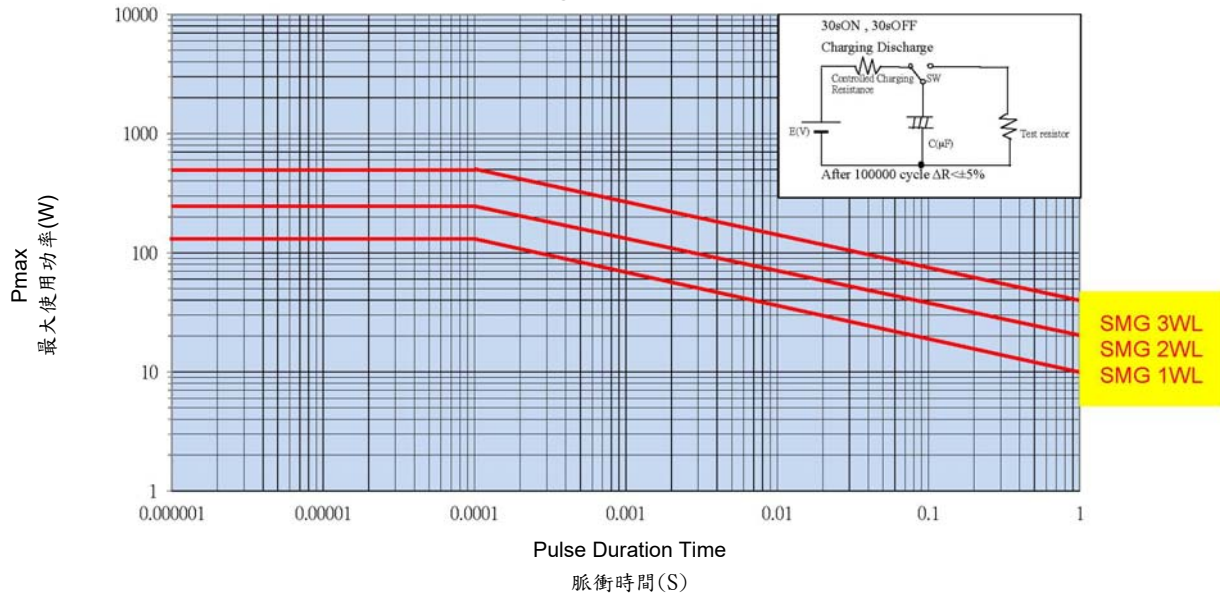
### 10/700 $\mu\text{s}$ Lightning Surge



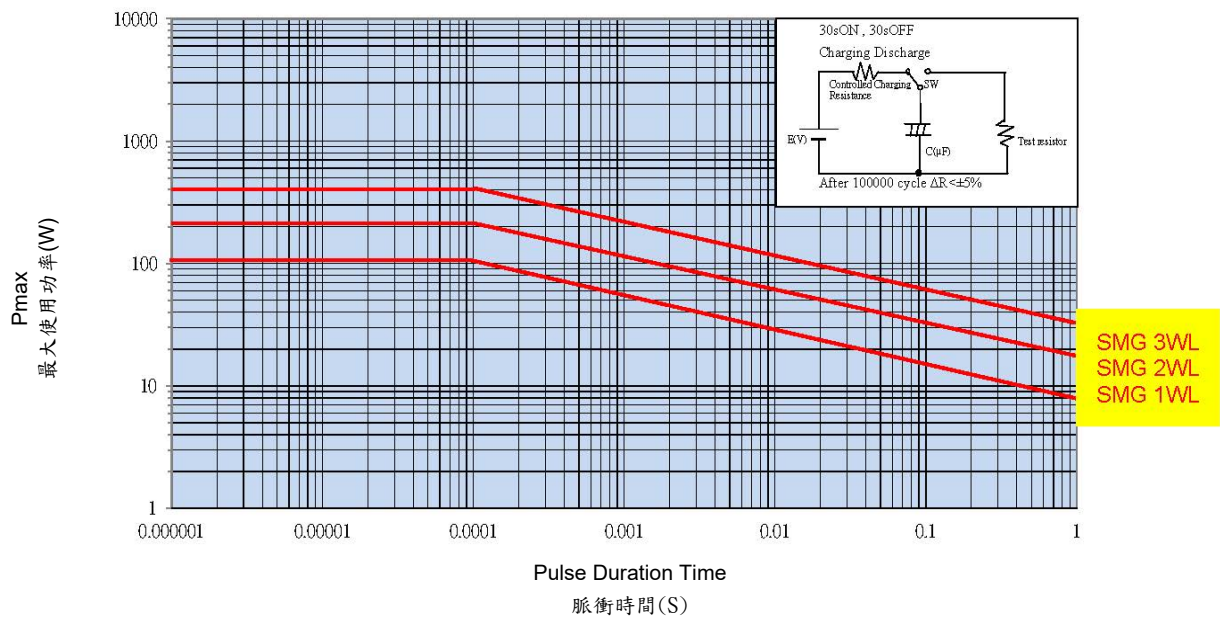
## Pulse Characteristics

### 脈衝特性曲線

#### Single Pulse



#### Continuous Pulse



## How to order

### (訂貨方式)

It is composed by Type, Rated Wattage, Nominal Resistance and Tolerance.

**SMG**

a.

**2WL**

b.

**1M**

c.

**J**

d.

a. : Type (種類) : Metal Glaze High Voltage Chip Resistors are called "SMG".

b. : Rated Wattage (額定電力) : Shown by "W", such as 1WL, 2WL, 3WL.

c. : Nominal Resistance (公稱電阻值) : 1MΩ.

d. : Tolerance (容許誤差) : F=±1%, J=±5%.

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